

REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application.

Claims 1-3 and 5-12 are now pending in this application. Claims 1 and 6 are independent. Claim 4 has been cancelled. Claims 1 and 3 have been amended. Claims 5-12 have been added.

Reconsideration of this application, as amended, is respectfully requested.

Rejection Under 35 U.S.C. § 112, Second Paragraph

The Examiner comments on claims 3 and 5 as failing to meet the requirements of 35 U.S.C § 112, second paragraph.

Particularly, the Examiner comments on the phrase “a power board” in claim 3. In order to address this concern, Applicants have deleted the phrase “a power board” and the phrase “a signal board” from claim 3.

The Examiner also objects to the phrase “thereby reducing the pins in number of the socket” in claim 4. In order to address this rejection, Applicants have cancelled claim 4.

Regarding the Examiner’s general comments regarding the narrative form of the claims, Applicants present herewith claims 6-12 which are presented in a form most common to U.S. practice.

Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C § 112, second paragraph is respectfully requested.

Rejection Under 35 U.S.C. § 103

Claims 1-4 stand rejected under 35 U.S.C § 103(a) as being unpatentable over Araki et al. in view of Umeda. This rejection is respectfully traversed.

Applicants' independent claims 1 and 6 recite a combination of structural features. Independent claim 1's combination includes "a power pin for receiving a power signal from an external source is mounted on the upper portion of at least one edge of the ceramic PCB and a signal pin for receiving various signals from an external source is mounted on the upper portion of at least one edge of the epoxy PCB in line with the power pin."

The combination recited in independent claim 6 includes "a power pin mounted on an upper surface and along a first edge of said ceramic PCB, said power pin for receiving a power signal from a source external to said module body; and a signal pin mounted on an upper surface and along a first edge of said epoxy PCB, said signal pin for receiving various signals from a source external to said module body, wherein said signal pin is linearly arranged relative to said power pin." It is respectfully submitted that none of the prior art of record shows, or suggests, the combinations as set forth in Applicants' independent claims 1 and 6.

Araki et al. disclose a ceramic PCB and an epoxy PCB disposed inside a module body. However, Araki et al. do not show, or suggest, a power pin having a mounting arrangement as claimed. Nor do Araki et al. show, or suggest, a signal pin having a mounting arrangement as claimed. Specifically, Araki et al. fail to show a power pin mounted on the upper portion or surface of an edge of the ceramic PCB and a signal pin mounted on an upper portion or surface along an edge of the epoxy PCB and in line with the power pin.

Umeda fails to cure the deficiencies of the primary reference to Araki et al. Umeda shows (Fig. 4) an output terminal 15, connected to a base substrate 13 and a control terminal 18 connected to a control circuit substrate 14. However, Fig. 4 illustrates that the control terminal 18 is not linearly arranged relative to the output terminal 15. Therefore, Umeda fails to cure the deficiencies of Araki et al.

Moreover, Applicants' added dependent claim 7 recites a combination including a second power pin located along an opposite edge of the ceramic PCB, and a second signal pin located along an opposite edge of the epoxy PCB. The first power pin and first signal pin are linearly arranged and the second power pin and the second signal pin are linearly arranged.

Since Umeda only shows a single output terminal 15 located on the base substrate 13, and a single control terminal 18 located on the control circuit substrate 14, Umeda cannot suggest to one of ordinary skill in the art the particular arrangement, as set forth in claim 7.

By the present invention, a module body housing a ceramic PCB and an epoxy PCB is designed in a compact manner. Further, the layout of the power and signal pins prevents the pins from gathering together at one side of the module. Such gathering leads to difficulty in fabricating an instrument using the module body.

For the reasons as stated above, reconsideration and withdrawal of this rejection are respectfully requested.

CONCLUSION

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding rejections and that they be withdrawn.

It is believed that a full and complete response has been made to the Office Action, and as such, the present application is in condition for allowance.

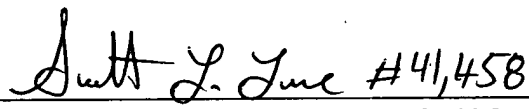
Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Mr. Scott L. Lowe (Reg. No. 41,458) at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

Applicants respectfully petition under the provisions of 37 C.F.R. § 1.136(a) and 1.17 for a one month extension of time in which to respond to the Examiner's Office Action. The Extension of Time Fee in the amount of \$110.00 attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and further replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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Enclosures: Version with Markings to Show Changes Made

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Specification

On page 8, lines 14-17 have been replaced as follows:

--When power (AC 220V) is applied, the microcomputer mounted on the epoxy PCB 102 is in a standby state. When the microcomputer generates a command, the command is transmitted through the socket 103 to the high voltage IC (HVIC) mounted on the ceramic PCB 101 [102].--

In the Claims

Claim 4 has been cancelled.

The claims have been replaced as follows:

1. (Amended) A one system module in which a socket is placed between a ceramic PCB and an epoxy PCB that are disposed inside a module body, a power element and signal elements are respectively mounted on the upper portion of each PCB, wherein a groove is made at the lower side surface and at the middle side surface of the module body to support the ceramic PCB and the epoxy PCB to form a [formed in] two-story structure, and a power pin for receiving a power signal from an external source is mounted on the upper portion of at least one edge of the ceramic PCB and a signal pin for receiving various signals from an external source is mounted on the upper portion of at least one edge of the epoxy PCB in line with the power pin.

3. (Amended) The one system module according to claim 1, wherein the power pin [as a power board] is mounted on the ceramic PCB by soldering, while the signal pin [as a signal board] is mounted on the epoxy PCB by soldering.

Claims 5-12 have been added.